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ABSTRACT

This newsletter discusses the evaluation of environmental education (EE) in schools, highlighting an introductory chapter of a proposed Unesco-United Nations environmental program guide on evaluating such programs. The benefits of evaluating an EE program (including program improvement, growth in student learning, better environment, and program support) are addressed. The newsletter also includes discussions of: (1) environmental education courses at the university level, focusing on the origins, diversity, and educational objectives of these courses, and the teaching and learning processes deemed essential to give coherence to their wide-ranging subject matter; (2) the structure and context of the EE network of the European community; (3) EE activities in Asia; (4) a pilot project on the introduction of EE into Upper Volta's rural primary schools; and (5) a poster exhibit entitled "Ecology in Action." In addition, a description of an EE program in Israel (including program objectives, instructional materials, and teacher training) and descriptions of EE workshops, conferences, and publications are provided. (JN)

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UNESCO-UNEP ENVIRONMENTAL EDUCATION NEWSLETTER

*Vol. IX, No. 3, September 1984*

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# Evaluation of Environmental Education in Schools

Evaluation as a fundamental and continuing aspect of effective environmental education was among the conclusions of the Intergovernmental Conference on Environmental Education, held in Tbilisi, USSR, 1977. Specifically the Conference called for "the reinforcement of research and experimentation on the lines of emphasis, content, methods and instruments necessary for environmental education". As a corollary to this, the Conference stressed "the need for constant **evaluation** of the many... innovations which have been introduced into environmental education in many Member States in order to encourage and improve them and to extend them to other educational institutions and programmes". (Final Report).

In this connection, the Unesco-UNEP International Environmental Education Programme is completing preparation of a practical guide on evaluation of environmental education in schools. The procedure will be presented as four basic steps: (1) deciding what to evaluate; (2) planning how to do it; (3) carrying out the evaluation; and (4) using the results. The introductory chapter indicates the following principles and practises.

The goal of evaluation is improvement of the teaching/learning process and particularly, with regard to the present guide under preparation, the aid of the teacher. Two keys to outstanding teaching are *effectiveness* and *efficiency*. Effectiveness means that the results are worthwhile, for example, that students have achieved proficiency in thinking about environmental issues. Efficiency means that the methods used and settings established are the best in terms of cost, time required and appropriateness. *Evaluation*, then, is judging the worth or value of an environmental education (EE) programme — its products, ends or results (its effectiveness) and its processes, means or ways of doing its job (its efficiency).

Benefits are best seen as involving four interrelated components of an EE programme : (1) programme improvement, (2) growth in student learning, (3) better environment and (4) programme support.

*Bettering the instructional programme* involves improving (a) teaching methods and learning activities, (b) the learning environment inside and outside the schoolroom and (c) instructional resources. *Greater growth in learning* on the part of students means acquisition of knowledge, the study of values and ethical reasoning, the improvement of independent thinking and action skills. Evaluation can help by diagnosing student learning needs, measuring achievements and using evaluation itself as an effective teaching tool.

*A better environment* is the ultimate goal of environmental education. Learning by doing, or problem solving, is a major way to teaching EE. Environmental problem solving may be direct, as in tree planting, or indirect, as in communicating a concern about an environmental problem to an official or body that can then act directly upon it. Evaluating the environmental effects of these student activities can help the teacher judge not only the learning growth in students but the worth of the instructional programme.

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Evaluation can lead to *greater support of an EE programme* because it indicates a teacher's care about the students, about the job of teaching and about the local environment. This gains the respect and support of school personnel and the general public, but students, above all, will be the direct beneficiaries and likely the programme's best supporters and ambassadors as a result of the evaluation exercise.

How does evaluation work? One way to think of evaluation is to picture a wheel with evaluation as the hub. The rim of the wheel is the educational process, involving the continuous cycling of four interrelated events: (1) assessment of student needs, (2) consideration of goals and objectives, (3) development of instructional activities and of the learning environment and (4) growth in student learning. The teacher's part is to keep the wheel rolling smoothly in the right direction. Both teachers and students, however, should be involved in the evaluation process. They are obviously the ones most closely associated with the EE programme and its implementation.

There is yet another, perhaps even more important, reason why *students* should be involved in evaluation: it contributes to the development of independent critical thinking on their part, which is one of the principal goals of environmental education. This means they should be involved from the very beginning in the planning of the evaluation exercise as well as in its execution and feel free to express their critical opinions.

Possibly the greatest *obstacle* to evaluation is providing the time for it. The solution is to build it into the EE programme from the start either as a set period or spread out through the programme. In either case, it is advisable to limit the evaluation to what is most important. Another obstacle is often the hiring of a consultant for the evaluation. The guide under preparation by the International EE Programme is designed to aid the teacher in this function.

Lastly, a well-conceived and well-implemented evaluation of the EE programme will be the best reply to a frequent criticism of the teacher as the principal evaluator, namely, his or her subjectivity. Open invitation of inspection and review, the seeking of reactions and opinions from students, parents and the community and the honest reporting of findings from the evaluation can overcome this criticism and demonstrate the teacher's objectivity.

(Publication of *Evaluating Environmental Education in Schools* will be announced in *Connect* when it occurs).

# Environmental Education Courses at the University Level

There are now distinctly new or modified courses addressing environmental themes in universities throughout the world. This emergence of environmental courses at the university level can be closely associated with the ongoing discussions about environment and development in the UN system and other international circles. Some of the main points and observations about these courses might be conveniently summarized under three main headings: (1) origins and diversity, (2) educational objectives and pedagogy, or more simply (3) the teaching and learning processes deemed most essential or appropriate for the purpose of such environmental courses.

## Origins and Diversity

The diversity of environmental courses is related to the inherent broad scope of environmental education. The original initiatives for these courses have come from almost every department or faculty of a given university with the result that courses have the particular characteristics and interests of their academic originators. Thus the environmental courses exhibit quite varied groupings of subject matter, relying largely on three primary guidelines for their groupings. These are (1) umbrella themes, used mainly by courses oriented towards academic teaching and/or research; and (2) the relative emphasis given to one or both directional vectors inherent in people-environment interrelationships, i.e., the impact of people on the environment and the impact of the environment on people.

Four broad thematic categories have been discerned as emerging in environmental courses in universities of North America, Britain and Western Europe :

1. *Environmental design*, which draws upon components from fields such as architecture, civil engineering, town and country planning, landscape architecture, industrial design, regional science and urban studies, along with various of the supporting disciplines ;

2. *Environmental conservation and management*, which draws on components from fields such as forestry, agricultural land use, countryside planning, water resource management, minerals and energy development, fish and wildlife management, and parks and outdoor recreation planning, along with various of the supporting disciplines ;

3. *Environmental health sciences*, which draws on components from fields such as public health and hygiene, sanitary and chemical engineering, occupational health and safety, and some aspects from bio-medical science such as toxicology, nutrition and drug use, along with various of the supporting disciplines ;

4. *Human and social ecology*, which draws on components from fields such as sociology and social planning, community organization and services, law, human rights, criminal justice, social work, psychology and counselling, along with various other supporting disciplines.

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The grouping of subject matter by clusters of disciplines depends on the relative importance attached by a given course to natural sciences, social sciences and the humanities. Generally, courses labelled as "environmental science" will be devoted almost exclusively to the biophysical aspects of environmental problems, while those called "environmental studies" will likely be emphasizing human, social and institutional aspects of various environmental concerns. In recent years, yet another category of content grouping is beginning to emerge around the theme of "environmental ethics". This is rooted in the humanities and is inclined to question how far either the natural or social sciences can go in dealing with environmental issues in other than a superficial way.

The number of possible combinations of subjects and themes is thus quite large. It means that probably not two environmental courses are alike in terms of the content they dwell most upon, although many will be similar in terms of issues they address. It also means that courses labelled as "environmental management" will also show considerable variation in what they actually embrace. Moreover, groupings of subjects similar to the above are being brought together at universities under other titles, such as regional planning and management, health sciences, natural resources management, liberal science, energy studies, technology assessment, and so on.

## Educational Objectives

University responsibilities for environmental education are essentially to give instruction at undergraduate and graduate levels, pursue scholarship and research on environmentally-related topics, offer informed comment and criticism on environmental issues, and assist with off-campus community-initiated activities of various kinds. The particular characteristics of a given environmental course are therefore determined by which of these pursuits the organizers choose to emphasize with reference to the "target audiences" they wish to serve.

Generally, graduate level environmental courses have been organized around one of three different approaches: (1) they provide instruction under a broad spectrum of themes and/or disciplines to enhance environmental awareness, knowledge and commitment of people who already hold qualifications from one of the standard disciplines or professions, and they usually place special emphasis on enhancing skills for working in effective problem-solving teams; (2) they introduce and/or strengthen selected environmental components for direct integration into ongoing graduate level training for professionals in some one field, so that new practioners will be able to deal much more responsibly and effectively with the environmental ramifications of their work; or (3) they create an environmental research facility which allows people pursuing advanced degrees in their chosen discipline or profession to work on environmentally-related topics in the context of ongoing research programmes.

## Teaching and Learning in Environmental Courses

The question posed to environmental courses is how best to address the kinds of interrelationships which need to be made across the wide-ranging subject matter they draw upon. It is in how they handle this "integrationist" aspect of what they do that the distinctiveness of each course is more likely to be found. And this in turn may be why "interdisciplinarity" has occasioned so much attention and argument during the formative stages of such courses. By and large "interdisciplinarity" has been interpreted in three main ways to refer to: (1) a conceptual integration of subject matter from two or more disciplines to give some new intellectual synthesis; (2) a personal integration of one's own knowledge and experiences which are integral to one's own development; and (3) a practical integration of knowledge and skills to solve various problems.

In practice, environmental courses have searched for and experimented with a variety of means for developing some kind of interdisciplinarity in what they do. Probably the most common approach used to give at least a modicum of conceptual coherence is to relate topics to a recurring theme such as "environmental management" and/or to try and invoke some systems perspective to draw attention to linkages, interactions or interdependencies among phenomena discussed. "Ecology" is quite often given special prominence in environmental courses because of its systems perspective for interpreting natural environments, but there are obviously a number of other ways of emphasizing systems viewpoints. Two others which seem widely used are (1) examining the spatial relationships among human activities, and (2) tracing energy flows through natural or engineered systems. Integration of material is also sought in a number of courses through use of modelling and computer simulation techniques of various kinds.

On the more practical problem-solving aspect of interdisciplinarity, perhaps the most widely used instructional device now is to convene small groups to tackle real problem situations in a workshop setting. This gives some experience of interdisciplinarity-in-practice, and the skills being learned are mainly those of effective cooperation towards task achievement. A number of techniques are available and used from social group dynamics or "modern management" methods. A particularly interesting development for environmental management has been the application of group processes and computer simulations to bridge gaps between scientists, managers and user groups in working towards problem-solving.

(The above article is based on a more extensive paper by Prof. George Francis, "Perspectives on Graduate Level Environmental Management Courses", published in *Environments: a journal of interdisciplinary studies*, 15 March 1983, University of Waterloo, Canada, N2L3G1. A survey conducted by the Unesco-UNEP International EE Programme on tendencies in environmental education at the university level is currently underway).

# The Environmental Education Network of the European Community

The European Community has an action programme for the environment which includes environmental education as well as an Environmental Education Network.

**Primary Phase of the EE Network**

A feasibility study was first undertaken of current trends in EE and of models of good practice in the schools of the ten Member States of the European Community. Then, in 1977, the Commission of the European Communities launched the European Community EE Network, comprising twenty nine pilot schools from nine Member States. The pupils in the Network were in the age range of 9-11 years (later extended upwards in some countries to 14 years and downwards in others to 4 years). The Network had a Coordinating Team composed of members of the Curriculum Development Unit of Trinity College, Dublin, Ireland, and was under the overall management of an Advisory Committee, comprising representatives of the Member States (National Experts), officers of the Commission of the European Communities and members of the Coordinating Team.

The Primary Network was essentially a communication network, facilitating the exchange of ideas and experience. It offered teachers the chance to learn from each other and to give each other mutual encouragement in their efforts to develop environmental education programmes. They visited each other's schools, attended seminars, formed working groups and produced materials of various kinds.

The outstanding feature of the Primary Network was the commitment of its participants. It was this sense of commitment which encouraged the Commission of the European Communities and the National Experts in their decision to launch the Network into a secondary phase with an older age group of pupils.

**Structure of the Secondary Network**

The decision to launch the Secondary Network was taken by the Network's Advisory Committee in December 1981 and it was actually launched in April 1982 with the following guidelines :

1. *Sponsorship :* The Network is sponsored by the Directorate-General for the Environment, Consumer Protection and Nuclear Safety of the Commission of the European Communities, in conjunction with Member States of the European Community.

2. *Aims :* The fundamental idea of the Network remains a simple one. It has two operational aims — one dynamic, the other seminal. First, the Network is dynamic in the sense that the participating schools cooperate with and learn from each other in their efforts to put the concept of environmental education into practice. Second, the Network is seminal in the sense that the results of this process of cooperation and mutual learning will be made available to other schools and to the public at large.

3. *Pilot Schools :* The pilot schools are to be selected by the national authorities within each Member State. The national authorities will also determine the number of schools and the general context of their work in the Network. The age level of the pupils involved will be between 12 and 16 years.

4. *Duration :* It is intended that the Network will last for four years from the beginning of the school year 1982/83 to the end of the school year 1985/86, subject to the annual approval of the relevant item in the Commission's budget.

5. *Advisory Committee :* The Network will continue to have an Advisory Committee to oversee its general running. The Committee will comprise the National Experts, representatives from the Commission and members of the Coordinating Team.

6. *Coordinating Team :* The function of the Coordinating Team will be as follows:

(a) to maintain regular contact with all the participants of the Network and to offer advice on content and procedures; (b) to facilitate the exchange of ideas and experience; (c) to organise seminars and working groups; (d) to produce publications and reports; (e) to assist the Commission and the National Experts in the management of the Network; (f) to produce a Newsletter ; and (g) to maintain links with other international projects in environmental education.

**Context of the Secondary Network**

The context of the secondary Network is twofold: environmental and educational. The environmental context is principally found in the European Community's Action Programme on the Environment, first adopted in 1973 and later extended in 1976 and in 1982, in which there is a specific mention of the intention to develop a network of pilot schools. The European Community, however, always had a general concern for the environment. This concern goes back to the founding of the Treaty of Rome in 1957 and could be said to be an essential part of the fundamental philosophy which brought the Community into being. From the beginning the Member States declared that economic growth was not their only objective; they were also concerned with the standard and quality of living of their people.

It is possible to identify two major principles which underly environmental policy, namely, that in Member States of the European Community:

1. People's relationship to the planet and its resources should be characterized by husbandry and good management rather than by unthinking exploitation. Environmental policy is therefore not a gloss added to production and consumption, but an effort to understand and respect the planet which sustains humanity and to develop the proper relationship to it.

2. Environmental policy should be designed to increase human welfare by improving living and working conditions. Thus, while it is important to be concerned with reducing the negative consequences of production, consumption and urbanisation and with preventative measures to safeguard the future, the ultimate concern should be to create the best conditions in which individuals, families, groups and whole societies can flourish.

The educational context of the Network is to be found in the various guidelines for environmental education that have been drawn up over the last decade at both international and national levels. These guidelines have much in common in that they envisage some or all of the following dimensions to environmental education: it should consider the environment in its totality — natural and man-made, ecological, political, economic, technological, social, legislative, cultural and aesthetic; it should be a continuous lifelong process, both in school and out-of-school; it should be an integral part of the education process. It should not be seen as one more subject to be added to the existing curriculum, but should be incorporated into programmes intended for all learners; it should be interdisciplinary in its approach; it should focus on immediate problems and allow the learner to participate in finding solutions; it should promote the value and necessity of local, national and international cooperation in the solution of environmental problems; it should stress attitudes and awareness as well as knowledge and skills.

The directors of the European Community Environmental Education Network regard it as an international case study. In this context they state: "The Network has many exciting possibilities. It can provide the context for comparative work in environmental education for pupils in the 12-16 years age group in schools of ten Member States of the European Community over a period of four years. It can do this at different levels: firstly, as an example of how programmes in environmental education can be developed which are best suited to the character of individual schools and to the area which they serve; secondly, as an example of how a project in environmental education can act as a unifying force, operating across the boundaries of different national cultures and traditions; and thirdly, as an example of how a comparatively small group of pilot schools may exert an influence both within and beyond the European Community".

(The above article is based on publications of the European Community EE Network. For more information, write to: Curriculum Development Unit, Trinity College, Dublin, Ireland.)

# EE Activities in Asia

The Fifth Unesco-BIOTROP Training Seminar in Environmental Science and Management (Asia) was organized by BIOTROP (see below for address) in cooperation with the Center for Natural Resources Management and Environmental Studies of the Bogor Agricultural University of Bogor, Indonesia, 17 November-14 December 1982. There were seventeen trainees from Indonesia, Malaysia, Philippines and Singapore.

The objectives of the subregional training seminar were (1) to teach participants the principles and methodologies of environmental science and management, (2) to expose participants to current environmental problems in their areas, (3) to exercise participants in the application of environmental principles and methodologies.

There were twenty-seven lecture topics followed by discussions, which included: an introduction to environmental problems, principles of ecology, economics of natural resources, environmental management, model and simulation, remote sensing, environmental planning and administration, water, air and noise pollution, management of environmental pollution, environmental microbiology, physiology and toxicology, environmental impact analysis, etc.

Participants were given the assignment of writing papers on subjects related to these lecture topics or to problems of natural resources and environmental management in their respective countries. The papers were presented at the end of the training seminar.

In addition to the training seminar, BIOTROP has conducted a number of ten-month training courses in specific aspects of tropical biology. For more information on the training seminar and courses, write: Director, BIOTROP, P.O. Box 17, Bogor, Indonesia.

# Pilot Project on Introduction of EE into Rural Primary Schools — Upper Volta

This pilot project was devised and implemented by Upper Volta's Ministry of Education, Arts and Culture in association with the Centre for Active Teaching Methods. The goal was to incorporate an environmental dimension based on **desertification problems** into the primary school cycle. Objectives of the pilot project were: to perfect teaching materials relating to desertification problems in the Sudan-Sahelian (semi-arid) zone; and to develop a training curriculum on desertification in the Sahel for primary school teachers.

A teacher training seminar on environmental problems in Upper Volta was organized resulting in an

experimental training programme applicable to other EE training activities. The seminar was based on lectures as well as discussions and field work. The lectures dealt with: concepts of the environment and present-day environmental problems; EE — aims, objectives, characteristics, principles and methods; ecosystems in the Sudan-Sahelian area — causes of desertification and its progress; water and soil conservation; climate and its environmental effect; soils and fauna of Upper Volta and their roles in stabilizing ecosystems; deforestation and deterioration of the environment; sociological data on the central region (Mossi plateau); and integration of development projects.

Materials incorporating teaching guidelines and contents related to desertification problems in the Sudan-Sahelian zone were prepared for primary school teachers, namely, a teacher's guide and a set of teacher's cards. The guide consists of a series of illustrated lectures and bibliographies dealing with various aspects of the relations between people and their environment. The teacher's cards are devoted to factors affecting desertification, the principal environmental problem of Upper Volta. The subjects dealt with are: bush fires; deforestation; humanity and energy; pressures exerted on the environment by people and animals; soil conservation; the principles of planting and plant care; water and health.

With the ultimate goal of developing environmental education throughout the nation, Upper Volta authorities have provided for the extension of the pilot activities to other regions of the country, including the Northern Sahelian region and the Sudan-Guinean region to the Southwest.

# Ecology in Action: An Exhibit

How can scientists communicate the results of their research to a variety of non-specialist audiences? In other words, how can technical and scientific information on the environment be most effectively transformed into general environmental education? One attempt to find an answer to this question is the poster exhibit entitled *Ecology in Action*, which has been prepared by the Secretariat of the Man and the Biosphere (MAB) Programme, in cooperation with Etudes et Planification des Communications of Paris, using research results acquired by this Unesco programme during its existence.

The MAB exhibit highlights some of the major land — use and resource — management problems facing humanity today and suggests how research can help to solve these problems. The MAB Programme, which was begun over a dozen years ago, now has over 1,000 research projects under way in about eighty countries, among which are a small number of pilot projects in four priority areas: the humid tropics, arid and semi-arid zones, urban systems and biosphere reserves. As these projects began to produce results, the need to communicate these results to all potential users — teachers, students and general public — became increasingly evident. Hence the current exhibit *Ecology in Action*.

Instead of preparing a *single* exhibition to be displayed in *one place*, Unesco-MAB chose to create an exhibit which could be replicated in multiple copies. Thus *Ecology in Action* has been produced in a total of 1,000 copies in three languages (English, French and Spanish) and in the form of light-weight color posters or wall-charts which can be multiplied many times by offset printing techniques. This multiple reproduction has therefore meant a far vaster potential public that is spread virtually worldwide.

It was further decided to have multiple *target audiences* for the exhibit, reflecting the heterogeneity of the potential users of the results of environmental research — the informed general public, decision-makers responsible for determining environmental policy, the allocation of EE funds, etc., land-use planners and resource managers of various kinds, educators and students at secondary and tertiary school levels, environmental research workers, et al. To reach these different groups, a "multilevel" approach was adopted — multilevel in terms of the user's scientific knowledge and the time available for viewing the exhibit. In practical terms, this meant incorporating into the posters different hierarchies of information, more or less detailed, more or less technical, more or less time-consuming to read. Individual viewers can thus make use of the exhibit at a level appropriate to their interests, training and available time.

Specifically, the five main themes of the *Ecology in Action* exhibit are: (1) research for land use planning — ingredients, strategies, obstacles; (2) the tropical forests — a rich but fragile resource; (3) marginal lands — coping with and taking advantage of constraints; (4) cities as ecological systems; and (5) conservation of nature — how, where and why. There are thirty-six color posters, which — measure 120 cm × 80 cm; are printed on high quality glossy paper; are laminated (plastic-coated) for durability; contain diverse graphic elements, including artistic drawings, photos and diagrammes; are accompanied by a user's guide and a descriptive note for visitors which can be easily reproduced; and are rolled and packed in a compact carton for easy shipping and storage.

As mentioned, there are English, French and Spanish versions of the exhibit, however it is also available without texts, making it possible to add the appropriate translation. Although the thirty-six posters are a complete exhibit in themselves, *each* poster and *each* group can be used as independent modules,

supplemented with audio-visual and other materials featuring, for example, local and national issues and situations.

(More information on the *Ecology in Action* exhibit may be obtained by writing: MAB Secretariat, Unesco, 7, place de Fontenoy, 75700 Paris, France.)

# An EE Programme on the Built Environment

Recently completed in Israel is the EE programme known as *Environments*, which is geared to junior high school students and ninth and tenth graders. The programme's objective is to help students better perceive and understand the built environment for the purpose of taking appropriate action to improve it.

The programme is based on the approach integrating education *in* the environment, *about* the environment and *for* the environment. In accordance with this approach, student-centered interaction with the environment is used as the basis for inquiry learning; the concepts and processes underlying environmental systems and their interrelationships are taught; and an attempt is made to foster individual responsibility and action on behalf of the environment. The traditional educational approach based on individual study of specific disciplines is replaced by study which is interdisciplinary in nature and utilizes a variety of means to enable both the individual and the community to participate in the management of the environment. *Environments* draws upon such realms as environmental protection, urban planning, geography, biology and citizenship to achieve its aims.

The programme is composed of five study units: an introductory unit on environmental systems including a series of posters and respective units on the classroom, school, neighbourhood and city systems. Each unit has a series of objectives and includes summaries, questions or discussion, study activities and references for further study. The programme is built on a modular basis, so that units may be taught alone or collectively. It is recommended, however, that at least three units be taught, including the first, fifth and one of the intermediate units on the classroom, school or apartment.

The programme is based on a kit of teaching aids including three elements: (1) A set of posters focusing on the various components of the built environment, each comparing present and past developments. The posters relate to the following elements: environmental systems, the home, transport, production processes, pollution types, the city, and the future in which futuristic solutions to environmental problems are presented. The posters are meant to accompany the first study unit. (2) A teacher's guide wherein each page is divided into a section on content and a section on methodology. The first section provides basic information on concepts, problems and issues in environmental protection, while the second section proposes teaching aids and activities for both individual and group work. (3) A student booklet presenting basic concepts and principles as well as activities and a series of simulation games intended to help the students pass through the following learning processes: (a) identification of components within the built environment; (b) subjective assessment of the built environment in terms of the student, his social group and his surroundings; (c) decision-making whereby a choice is made as to those activities which will enable maximal social fulfillment; (d) implementation of activities; (e) assessment of results; (f) implementation of changes; and (g) transfer and implementation of acquired knowledge to new situations.

*Environments* is meant to guide the student from observation and involvement with his familiar micro-environment toward more complex environments in which he can become involved through such means as academic study, group discussions, simulation games, field trips and creative activities. The programme was not developed as a separate curriculum study, but rather as an enrichment programme which may be incorporated into geography, biology or social studies.

To introduce teachers to the new programme, teacher training courses have been taking place throughout the country. Thus far 1000 student booklets and 250 teacher manuals and posters have been printed — enough for some 25 classrooms to be exposed to the experimental editions of the programme.

(The above report is based on an article in the *Israel Environment Bulletin*, Winter-Spring 1984. Inquiries should be addressed to the *Bulletin*, Environmental Protection Service, Ministry of the Interior, P.O. Box 6158, Jerusalem 91061, Israel).

# EE News and Publications

A five-day **International Youth Workshop** on Population, Development and **Environment** was held in Colombo, Sri Lanka, 28 November-2 December 1983. For more information, write: *WAY Information*, Leo-

nora Christina-svej 23, DK-4930 Maribo, Denmark. ◆ A subregional symposium on **Long-Term Development of Environmental Policy and Environmental Education in Europe**, organized by the Austrian Society for the Protection of Nature and the Environment, was held in Vienna, Austria, 9-11 June 1983. There were fifty participants from a dozen countries of Europe, representing scientific and other nongovernmental organizations (NGOs) actively involved in environmental education and protection. A report in German and English has been published by the Austrian Society, whose address is: Canovagasse 5/IV, A-1010 Vienna, Austria.

**UNEP** (United Nations Environment Programme) has published, in English and French, the *Register of International Treaties and Other Agreements in the Field of the Environment*. Write: UNEP, P.O. Box 30552, Nairobi, Kenya. ◆ No. 84-5 of *Nature*, a newsletter published by the **Council of Europe**, is devoted to a special report on the 4th European Ministerial Conference on the Environment. The newsletter appears in Dutch, English, French, German, Greek, Italian, Norwegian, Portuguese, Spanish and Turkish. Write: European Information Centre for Nature Conservation, BP 431 R6, F-67006, Strasbourg Cedex, France

The January/March 1984 issue of the *IUCN Bulletin*, published by the International Union for Conservation of Nature and Natural esources, has an article on the six-day meeting of a panel of experts to advise the organization on its programme in information and education, which includes a series of recommendations of interest to environmental educators. Write: **IUCN**, 1196 Gland, Switzerland. ◆ *World Conservation Strategy in Action* is a new periodical produced by the Conservation for Development Center of IUCN. It provides information on the implementation of the World Conservation Strategy, launched in 1980, and on the status of the development of national or subnational conservation strategies around the world. Information, comments or questions should be addressed to: Editor, WCS in Action, World Conservation Center, 1196 Gland, Switzerland. ◆ The July 1984 issue of the *OECD Observer* contains a lengthy illustrated article on "The Acid Rain Problem", which emphasizes both the technical and the economic aspects of the problem. The bi-monthly publication of the Organization for Economic Co-operation and Development **(OECD)** appears in English and French. Write: OECD, 2, rue André Pascal, 75775 Paris Cedex 16, France.

Three EE teaching aids have been published in **Arabic** by the Egyptian Ministry of Education: *Man and Environment, EE Prototype Activities* and *New Trends in EE*. For more information, write: Director of Population and Environmental Education, Ministry of Education, Cairo, Egypt. ◆ A booklet, entitled *Islamic Principles for the Conservation of the National Environment*, which correlates environmental principles with the Koran, has been published by Saudi Arabia. The booklet was prepared by four Islamic scholars in cooperation with the IUCN. Copies are available from: Dr. Abdulbar Al Gain, V.P., Meteorological and Environmental Protection Administration, P.O. Box 1358, Jeddah, Saudi Arabia. ◆ Special issue No. 7 of *Biology International*, the periodical of the International Union of Biological Sciences (IUBS), is devoted entirely to "The State of Biology in the Arab States". It is based on the papers presented and the discussions which followed at the regional symposium held in Baghdad, Iraq, 5-8 December 1983. For more information, write: Editor, *Biology International*, IUBS, 51, boulevard de Montmorency, 75016 Paris, France.

This report was received from the U.S. **Alliance for Environmental Education:** The first National Congress for Environmental Education Futures (August 1983) called attention to the common issues confronting environmental management and education... Concretely a unanimous resolution asked the Alliance for Environmental Education to work for an independent National EE Center, to promote environmental education, training, research and communication. The Alliance has accepted responsibility for exploring functions of a national center, the significance as well as the impact such a center could have on the field of EE, including current opportunities and constraints, as well as strategies for development and support of the center. The National EE Congress' co-sponsors are also working on initiatives for EE, some national in scope and some at the grass roots. For example, the National Science Teachers Association established a Task Force for defining excellence in EE and charged it to develop a position paper defining "desired State" conditions for environmental education. One EE initiative is occurring in Pennsylvania where the Secretaries of Education and Environmental Resources have established a 37-member task force to draft a master EE plan for Pennsylvania by the end of 1984. (For more information, write: The President, Pocono EE Center, RFD 1, Box 268, Dingman's Ferry, Pennsylvania 18328, U.S.A.).

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